

CLAIMS

- 1 1. A handpiece, comprising:
2 a handpiece assembly including a handpiece housing; and
3 an insert detachably coupled to the handpiece housing, the
4 insert including an RF electrode with a conductive portion and a
5 dielectric.
- 1 2. The handpiece of claim 1, further comprising:
2 a cooling fluidic medium dispensing assembly coupled to the
3 insert and the handpiece housing.
- 1 3. The handpiece of claim 1, wherein the cooling fluidic
2 medium dispensing assembly includes a fluid delivery member coupled
3 to a cooling fluidic medium valve member.
- 1 4. The handpiece of claim 3, wherein the cooling fluidic
2 medium valve member is positioned in the handpiece housing.
- 1 5. The handpiece of claim 3, wherein the cooling fluidic
2 medium valve member is positioned in the electrode assembly.
- 1 6. The handpiece of claim 3, wherein the fluid delivery
2 member is positioned in the handpiece housing.
- 1 7. The handpiece of claim 3, wherein the fluid delivery
2 member is positioned in the insert.
- 1 8. The handpiece of claim 3, wherein the fluid delivery

1 16. The handpiece of claim 3, wherein the cooling fluidic
2 medium valve member includes a solenoid valve.

1 17. The handpiece of claim 1, further comprising:
2 a force sensor coupled to the RF electrode.

1 18. The handpiece of claim 17, wherein the force sensor is
2 configured to detect an amount of force applied by the RF electrode
3 against a surface.

1 19. The handpiece of claim 17, wherein the force sensor is
2 configured to zero out gravity effects of the weight of the electrode
3 assembly.

1 20. The handpiece of claim 17, wherein the force sensor is
2 configured to zero out gravity effects of the weight of the electrode
3 assembly in any orientation of a front surface of the RF electrode
4 relative to a direction of gravity.

1 21. The handpiece of claim 17, wherein the force sensor is
2 configured to provide an indication of RF electrode contact with a skin
3 surface.

1 22. The handpiece of claim 17, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is below a minimum threshold.

1 23. The handpiece of claim 17, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is above a maximum threshold.

1 24. The handpiece of claim 17, further comprising

2 a tare button coupled to the force sensor.

1 25. The handpiece of claim 1, wherein the RF electrode
2 includes a flex circuit.

1 26. The handpiece of claim 25, wherein the flex circuit is
2 configured to isolate flow of a cooling fluidic medium from a back
3 surface of the RF electrode to a front surface of the RF electrode.

1 27. The handpiece of claim 25, wherein the flex circuit is
2 configured to create a reservoir for a cooling fluidic medium that
3 gathers at a back surface of the RF electrode.

1 28. The handpiece of claim 17, wherein the RF electrode
2 includes a conductive portion and a dielectric portion.

1 29. The handpiece of claim 17, wherein the RF electrode is
2 configured to be capacitively coupled to a skin surface when at least a
3 portion of the RF electrode is in contact with the skin surface.

1 30. A handpiece, comprising:
2 a handpiece assembly including a handpiece housing;
3 an insert detachably coupled to the handpiece housing; and
4 an RF electrode positioned in the insert, the RF electrode
5 including a flex circuit.

1 31. The handpiece of claim 30, further comprising:
2 a cooling fluidic medium dispensing assembly coupled to the
3 insert and the handpiece housing.

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1 32. The handpiece of claim 30, wherein the cooling fluidic
2 medium dispensing assembly includes a fluid delivery member coupled
3 to a cooling fluidic medium valve member.

1 33. The handpiece of claim 32, wherein the cooling fluidic
2 medium valve member is positioned in the handpiece housing.

1 34. The handpiece of claim 32, wherein the cooling fluidic
2 medium valve member is positioned in the electrode assembly.

1 35. The handpiece of claim 32, wherein the fluid delivery
2 member is positioned in the handpiece housing.

1 36. The handpiece of claim 32, wherein the fluid delivery
2 member is positioned in the insert.

1 37. The handpiece of claim 32, wherein the fluid delivery
2 member includes a nozzle.

1 38. The handpiece of claim 32, wherein the fluid delivery
2 member is configured to deliver a controllable amount of cooling fluidic
3 medium to the RF electrode.

1 39. The handpiece of claim 32, wherein the fluid delivery
2 member is configured to controllably deliver a cooling fluidic medium to
3 the back surface of the RF electrode.

1 40. The handpiece of claim 32, wherein the fluid delivery
2 member is configured to controllably deliver fluid to a backside of the
3 RF electrode to evaporatively cool the RF electrode and conductively
4 cool a skin surface in contact with the front side of the RF electrode

1 41. The handpiece of claim 32, wherein the fluid delivery
2 member is configured to controllably deliver a cooling fluidic medium to
3 the back surface of the RF electrode at substantially any orientation of
4 the front surface of the RF electrode relative to a direction of gravity.

1 42. The handpiece of claim 32, wherein the RF electrode is
2 sufficiently sealed to minimize flow of a cooling fluidic medium from
3 the back surface of the RF electrode to a skin surface in contact with
4 the front surface of the RF electrode.

1 43. The handpiece of claim 30, wherein the insert includes a
2 vent.

1 44. The handpiece of claim 32, wherein the cooling fluidic
2 medium valve member is configured to provide a pulsed delivery of a
3 cooling fluidic medium.

1 45. The handpiece of claim 32, wherein the cooling fluidic
2 medium valve member includes a solenoid valve.

1 46. The handpiece of claim 30, further comprising:
2 a force sensor coupled to the RF electrode.

1 47. The handpiece of claim 46, wherein the force sensor is
2 configured to detect an amount of force applied by the RF electrode
3 against a surface.

1 48. The handpiece of claim 46, wherein the force sensor is

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1 49. The handpiece of claim 46, wherein the force sensor is
2 configured to zero out gravity effects of the weight of the electrode
3 assembly in any orientation of a front surface of the RF electrode
4 relative to a direction of gravity.

1 50. The handpiece of claim 46, wherein the force sensor is
2 configured to provide an indication of RF electrode contact with a skin
3 surface.

1 51. The handpiece of claim 46, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is below a minimum threshold.

1 52. The handpiece of claim 46, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is above a maximum threshold.

1 53. The handpiece of claim 46, further comprising:
2 a tare button coupled to the force sensor.

1 54. The handpiece of claim 30, wherein the flex circuit is
2 configured to isolate flow of a cooling fluidic medium from a back
3 surface of the RF electrode to a front surface of the RF electrode.

1 55. The handpiece of claim 30, wherein the flex circuit is
2 configured to create a reservoir for a cooling fluidic medium that
3 gathers at a back surface of the RF electrode.

1 56. The handpiece of claim 30, wherein the RF electrode
2 includes a conductive portion and a dielectric portion

1 57. The handpiece of claim 30, wherein the RF electrode is
2 configured to be capacitively coupled to a skin surface when at least a
3 portion of the RF electrode is in contact with the skin surface.

1 58. A handpiece, comprising:
2 a handpiece assembly including a handpiece housing; and
3 an insert detachably coupled to the handpiece housing, the
4 insert including a flex circuit and an RF electrode that includes a
5 conductive portion and a dielectric.

1 59. The handpiece of claim 58, further comprising:
2 a cooling fluidic medium dispensing assembly coupled to the
3 insert and the handpiece housing.

1 60. The handpiece of claim 58, wherein the cooling fluidic
2 medium dispensing assembly includes a fluid delivery member coupled
3 to a cooling fluidic medium valve member.

1 61. The handpiece of claim 60, wherein the cooling fluidic
2 medium valve member is positioned in the handpiece housing.

1 62. The handpiece of claim 60, wherein the cooling fluidic
2 medium valve member is positioned in the electrode assembly.

1 63. The handpiece of claim 60, wherein the fluid delivery
2 member is positioned in the handpiece housing.

1 64. The handpiece of claim 60, wherein the fluid delivery
2 member is positioned in the insert.

1 65. The handpiece of claim 60, wherein the fluid delivery
2 member includes a nozzle.

1 66. The handpiece of claim 60, wherein the fluid delivery
2 member is configured to deliver a controllable amount of cooling fluidic
3 medium to the RF electrode.

1 67. The handpiece of claim 60, wherein the fluid delivery
2 member is configured to controllably deliver a cooling fluidic medium to
3 the back surface of the RF electrode.

1 68. The handpiece of claim 60, wherein the fluid delivery
2 member is configured to controllably deliver fluid to a backside of the
3 RF electrode to evaporatively cool the RF electrode and conductively
4 cool a skin surface in contact with the front side of the RF electrode.

1 69. The handpiece of claim 60, wherein the fluid delivery
2 member is configured to controllably deliver a cooling fluidic medium to
3 the back surface of the RF electrode at substantially any orientation of
4 the front surface of the RF electrode relative to a direction of gravity.

1 70. The handpiece of claim 60, wherein the RF electrode is
2 sufficiently sealed to minimize flow of a cooling fluidic medium from
3 the back surface of the RF electrode to a skin surface in contact with
4 the front surface of the RF electrode.

1 71. The handpiece of claim 58, wherein the insert includes a
2 vent.

1 72. The handpiece of claim 60, wherein the cooling fluidic
2 medium valve member is configured to provide a pulsed delivery of a
3 cooling fluidic medium.

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1 73. The handpiece of claim 60, wherein the cooling fluidic
2 medium valve member includes a solenoid valve.

1 74. The handpiece of claim 58, further comprising:
2 a force sensor coupled to the RF electrode.

1 75. The handpiece of claim 74, wherein the force sensor is
2 configured to detect an amount of force applied by the RF electrode
3 against a surface.

1 76. The handpiece of claim 74, wherein the force sensor is
2 configured to zero out gravity effects of the weight of the electrode
3 assembly.

1 77. The handpiece of claim 74, wherein the force sensor is
2 configured to zero out gravity effects of the weight of the electrode
3 assembly in any orientation of a front surface of the RF electrode
4 relative to a direction of gravity.

1 78. The handpiece of claim 74, wherein the force sensor is
2 configured to provide an indication of RF electrode contact with a skin
3 surface.

1 79. The handpiece of claim 74, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is below a minimum threshold.

1 80. The handpiece of claim 74, wherein the force sensor is
2 configured to provide a signal indicating that a force applied by the RF
3 electrode to a contacted skin surface is above a maximum threshold.

1 81. The handpiece of claim 74, further comprising:

2 a tare button coupled to the force sensor.

1 82. The handpiece of claim 58, wherein the flex circuit is
2 configured to isolate flow of a cooling fluidic medium from a back
3 surface of the RF electrode to a front surface of the RF electrode.

1 83. The handpiece of claim 58, wherein the flex circuit is
2 configured to create a reservoir for a cooling fluidic medium that
3 gathers at a back surface of the RF electrode.

1 84. The handpiece of claim 58, wherein the RF electrode is
2 configured to be capacitively coupled to a skin surface when at least a
3 portion of the RF electrode is in contact with the skin surface.

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